

Remarks/Arguments:

Claims 29-35, 42 and 43 are pending and rejected in the application. Claims 29, 30 and 34 have been amended. Claims 31, 32 and 35 have been cancelled. Claims 44 and 45 have been newly added. No new matter has been added.

On page 13, the Official Action rejects claims 31 and 32 under 35 U.S.C. § 103(a) as being unpatentable over Onggosanusi (US 7,110,378), Wallace (US 2002/0193146), Alastalo (US 2001/0047424), Heath (US 6,937,592) and further in view of Walton (US 2003/0128658).

On page 3, the Official Action rejects claims 29, 30, 33, 34, 35, 42 and 43 under 35 U.S.C. § 103(a) as being unpatentable over Onggosanusi (US 7,110,378) in view of Wallace (US 2002/0193146), Alastalo (US 2001/0047424) and Heath (US 6,937,592).

It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

Applicants' invention, as recited by claim 29, includes features which are neither disclosed nor suggested by the art of record, namely:

... the beam forming section forms ... a transmission beam to the SDM incompatible mobile station...

...and forms, for the SDM compatible mobile station, another transmission beam ... for reducing an interference ...

...the SDM incompatible mobile station and the SDM compatible mobile station to access simultaneously by use of a same frequency band... (Emphasis Added)

Claim 29 relates to the base station forming two different beams for communicating with two different mobile stations. Specifically, the beams are transmitted at the same time and in the same frequency band in order to reduce interference. This feature was previously recited in cancelled claim 31 and is supported on page 46 of the specification. No new matter has been added.

On page 13 of the Official Action, the Examiner admits that Onggosanusi, Wallace, Alastalo and Heath do not suggest the features in Applicants' claim 31 (they do not suggest a base station which transmits to a plurality of mobile stations simultaneously with a beam that

reduces interference between the stations). The Examiner, however, states on page 14 of the Official Action that Walton's paragraphs 100-104 suggest transmitting simultaneous beams at different frequencies which reduce interference between the mobile stations. Thus, Walton's signals are at different frequency bands so that they do not interfere with each other. Neither Onggosanusi, Wallace, Alastala, Heath, Walton nor their combination suggests transmitting a plurality of beams to a plurality of mobile stations at the same time in the same frequency band which reduces interference.

Applicants' claim 29 is different than the art of record, because a plurality of beams are transmitted simultaneously from the base station to a plurality of mobile stations using the same frequency. Specifically, even though the beams utilize the same frequency, they are formed in a way that they do not interfere with each other ("*... the beam forming section forms ... a transmission beam to the SDM incompatible mobile station... and forms, for the SDM compatible mobile station, another transmission beam ... for reducing an interference ...the SDM incompatible mobile station and the SDM compatible mobile station to access simultaneously by use of a same frequency band...*").

As shown in Applicants' Fig. 1, base station 1 may form beam 4-2 in order to communicate with SDMA compatible mobile station 3-2. Base station 1 may also form beams 4-3 and 4-4 to communicate with SDM compatible mobile station 2-1. Thus, base station 1 forms and transmits a plurality of transmission beams so that it can communicate with the mobile devices simultaneously. Furthermore, the beams are transmitted simultaneously at the same frequency. It is noted that the beams are formed in such a way that even though they are transmitted at the same frequency, they do not interfere with each other (they are spatially separate). This feature is at least described on page 46 of Applicants' specification ("*because the radio communication system uses TDD (time division duplex) uses the same frequency as the transmission medium, antenna base pilot signals are sent by timer code division to the base station one on each of the antennas provided on the mobile station's MS*"). Accordingly, for the reasons set forth above, claim 29 is patentable over the art of record.

Newly added claim 44 includes similar features to claim 29. Thus, newly added claim 44 is also patentable over the art of record for at least the reasons set forth above with respect to claim 29.

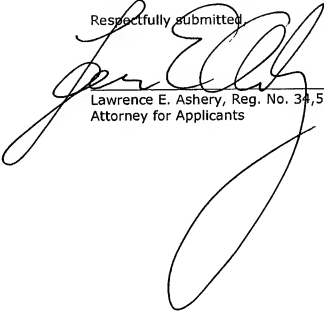
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Dependent claims 30, 33, 34, 42, 43 and 45 include all of the features from the claims from which they depend. Thus, these claims are also patentable over the art of record for at least the reasons set forth above.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



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